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APPLICATION NUMBER	FILED DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/404,253	03/15/95	KNOPP	C 356-94

EXAMINER
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ESM1/0226

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MAT. H	PAPER NUMBER
ART UNIT	9

2515

DATE MAILED: 02/26/97

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on April 15, Aug. 12 and Nov. 22, 1996

☐ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 03 month(s), or ~~thirty days~~, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-12, 16, 18, 19, 21-34, 37, 38, 45-52 is/are pending in the application.  
Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-12, 16, 18, 19, 21-34, 37, 38 and 45-52 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of Reference Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s): \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--SEE OFFICE ACTION ON THE FOLLOWING PAGES--

### Part III DETAILED ACTION

After three amendments filed April 15, Aug. 12 and Nov. 22, 1996, claims 1-12, 16, 18, 19, 21-34, 37, 38 and 45-52 are pending in this application. Claims 13-15, 17, 20, 35, 36 and 39-44 have been canceled.

#### *Claim Rejections - 35 USC § 112*

1. Claims 22-34, 37, 38, 51 and 52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "a camera means ..... aligned at a predetermined angle from said slit lamp means" (claim 22, lines 13-15) is indefinite because of the angle. The phrase "with the projecting and capturing occurring during rotation about the predetermined axis" (claim 23, lines 8-9) is unclear. Rotation of what? Claims 24 and 25 is unclear because the functions of projecting and capturing can not be positioned at a predefined position. The projecting means and the capturing means, however, can be positioned at a predefined position. Claim 27 is confusing because of the image detection axis. It appears that the first axis of the housing and the predetermined axis of the alignment determining assembly are perpendicular to the image of the slit upon the eye at point C, but the image detection axis is not. The feature "a pair of fixation points" (claim 27, line 27) is undefined. The phrase "the reflecting beam splitter" in claim 30 has no antecedent basis. The word "read" (claim 51, line 3 and claim 52, line 3) should read --recorded--.

Regarding claims 28,29, a broad range or limitation followed by linking terms (e.g., substantially, generally, preferably, maybe, for instance, especially) and a narrow range or limitation within the broad range or limitation is considered indefinite since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired.

*Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claim 23 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sasaki et al (JP 285242).

The limitations in claim 23 are shown in Sasaki et al's Fig.1 and the abstract.

4. Claims 50 and 21 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Snook (5,512,965).

The limitation in claims 50,21 are shown in Snook's Fig.s 1,14.

5. Claims 1, 5 and 7-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Papritz (3,762,803).

The limitations in claims 1, 5 and 7-11 are shown in Papritz's Fig. 1, column 1, line 48 through column 2, line 56.

6. Claims 1, 5 and 7-11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Kawase (4,176,937).

The limitations in claims 1, 5 and 7-11 are shown in Kawase's Fig. 1, column 2, line 31 through column 4, line 47.

*Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1,5,7-11,19,45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karasawa et al (4,171,877).

Karasawa et al discloses in Fig. 1, column 2, line 25 through column 4, line 29 comprising means 3 for projecting light onto the eye along a predetermined axis 17, means 26 for capturing the image of the eye and means 18 for rotating the projecting means and the capturing means 26. However, the Karasawa et al's device is used for photographing the images of the crystalline lens instead of the anterior surface of the cornea. Since means 6, slit 7 and lens means 3 form a slit image on the cornea and since the scattered slit image from the cornea can be captured by a camera with a focusing lens, it would have been obvious to a person at the time the invention was made to a person skilled in this art to modify the Karasawa et al's device by a focusing lens for focusing the scattering slit image on a camera. Such a modification is known in this art for capturing the scattering slit image as the same as the Applicant does.

Regarding claim 19, Karasawa et al's should include a motor for rotating the slit illumination system and the recording optical system.

Regarding claims 45 and 46, rest head is known the art of the ophthalmic apparatus with a slit lamp.

9. Claims 12,47-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karasawa et al.

Applicant admits on page 1, line 5<sup>+</sup> and page 16, lines 18<sup>+</sup> of the specification that the apparatus with a computer assisted analysis (processing means) and display of derived cornea shapes (in three dimensional structure) is known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to use processing means for providing a three-dimensional representation, as is conventional. Thus, claims 12,47-49 would have been obvious over Karasawa et al.

10. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al.

Applicant admits on page 1, line 5<sup>+</sup> and page 16, lines 18<sup>+</sup> of the specification that the apparatus with a computer assisted analysis (processing means) and display of derived cornea shapes (in three dimensional structure) is known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to use processing means for providing a three-dimensional representation, as is conventional. Thus, claims 24-26 would have been obvious over Karasawa et al.

11. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase or Papritz in view of Knopp et al (5,474,548).

The claimed invention in claims 2-4 are shown in Kawase's Fig.1 or Papritz's Fig.1 (see above), except for the alignment determining assembly including a first target means and a second target means disposed on a predetermined axis for aligning the apparatus with respect to

the eye. The technique of using two target means disposed on a predetermined axis for aligning the apparatus with respect to the eye is known in the art as taught by Knopp et al, for example. Therefore, it would have been obvious to a person skilled in this art to modify the Kawase's or Papritz's apparatus by forming an alignment determining assembly including a first target means and a second target means disposed on a predetermined axis as taught by Knopp et al for the same reasons as the Applicant does.

12. Claims 6 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase or Papritz in view of Knopp et al as applied to claim 1-5, 7-11 above, and further in view of Snook.

Snook discloses in Figs. 1, 13, 14, slit lamp means for projecting a convex slit image. therefore, it would have been obvious to an artisan to modify the slit lamp means in the apparatus of Kawase or Papritz in view of Knopp et al by forming convex slit means for providing a convex slit image as taught by Snook. Furthermore, use slit lamp means or convex slit lamp means for projecting a slit image on the eye is a matter of engineering choice because the results of imaging the anterior structure of the eye are substantial the same when using slit lamp means or convex slit lamp means as claimed by the Applicant. In other words, an artisan skilled in the art can select one of (rectangular) slit lamp means and convex slit lamp means as slit lamp means in the apparatus of Kawase or Papritz in view of Knopp et al that would provide similar results as the Applicant claimed.

13. Claims 16, 18, 27, 30-34, 37, 38, 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase or Papritz in view of Knopp et al.

Applicant admits on page 22, line 5<sup>+</sup> of the specification that the position of the limbus is known and does not move or change shape with respect to the other portion of the anterior portion of the eye; and making the limbus a suitable choice for a visible, fixed structure by which to measurement eye movement.. Therefore, it would have been obvious to one of ordinary skill in the art to choose the limbus a predetermined reference point on the eye as is conventional. Also using a camera as capturing means such a predetermined reference point on the eye is easily recognized by an artisan in measuring the movement of the eye. Thus, claims 16, 18, 27, 30-34, 37, 38, 51 and 52 would have been obvious over Kawase or Papritz in view of Knopp et al.

14. Claims 28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawase or Papritz in view of Knopp et al as applied to claim 27, 30-34, 37, 38, 51 and 52 above, and further in view of Snook.

Snook discloses in Figs. 1, 13, 14, slit lamp means for projecting a convex slit image. therefore, it would have been obvious to an artisan to modify the slit lamp means in the apparatus of Kawase or Papritz in view of Knopp et al by forming convex slit means for providing a convex slit image as taught by Snook. Furthermore, use slit lamp means or convex slit lamp means for projecting a slit image on the eye is a matter of engineering choice because the results of imaging the anterior structure of the eye are substantial the same when using slit lamp means or convex slit lamp means as claimed by the Applicant. In other words, an artisan skilled in the art can select one of (rectangular) slit lamp means and convex slit lamp means as

Serial Number: 08/404,253  
Art Unit: 2515

-8-

slit lamp means in the apparatus of Kawase or Papritz in view of Knopp et al that would provide similar results as the Applicant claimed.

***Response to Amendment***

15. Applicant's arguments with respect to claims 1-12, 16, 18, 19, 21-34, 37, 38, and 45-52 have been considered but are moot in view of the new ground(s) of rejection.

The objection to the specification and the rejection of claims 1-38 for the reasons set forth in the objection to the specification have been withdrawn.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy Mai whose telephone number is (703) 308-4874.



**HUY MAI  
PRIMARY EXAMINER  
GROUP 2500**

HM/  
February 18, 1997